

## Task 4: Classification with Logistic Regression.

- **Objective:** Build a binary classifier using logistic regression.
- **Tools:** Scikit-learn, Pandas, Matplotlib

### Hints/Mini Guide:

1. Choose a binary classification dataset.
2. Train/test split and standardize features.
3. Fit a Logistic Regression model.
4. Evaluate with confusion matrix, precision, recall, ROC-AUC.
5. Tune threshold and explain sigmoid function.

**Dataset:** You can use any dataset relevant to the task, e.g., Breast Cancer Wisconsin Dataset.

link to download: [click here to download dataset](#)

**What You'll Learn :** Binary classification, evaluation metrics, sigmoid curve.

### Interview Questions:

1. How does logistic regression differ from linear regression?
2. What is the sigmoid function?
3. What is precision vs recall?
4. What is the ROC-AUC curve?
5. What is the confusion matrix?
6. What happens if classes are imbalanced?
7. How do you choose the threshold?
8. Can logistic regression be used for multi-class problems?

### Submit Here:

After completing the task, paste your GitHub repo link and submit it using the link below:

-  [\[Submission Link\]](#)

## 📌 Task Submission Guidelines

- 🕒 **Time Window:**

You can complete the task anytime between 10:00 AM to 10:00 PM on the given day. Submission link closes at 10 :00 PM

- 🔍 **Self-Research Allowed:**

You are free to explore, Google, or refer to tutorials to understand concepts and complete the task effectively.

- 🔧 **Debug Yourself:**

Try to resolve all errors by yourself. This helps you learn problem-solving and ensures you don't face the same issues in future tasks.

- 💰 **No Paid Tools:**

If the task involves any paid software/tools, do not purchase anything. Just learn the process or find free alternatives.

- 📁 **GitHub Submission:**

Create a new GitHub repository for each task.

Add everything you used for the task — code, datasets, screenshots (if any), and a **short README.md** explaining what you did.

- 📁 **Submit Here:**

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- 👉 [\[Submission Link\]](#).

Best  
of  
Luck

